West Coast District Health Board
Te Poari Hauora a Rohe o Tai Poutini

Antibiotic Guidelines for Primary Care

West Coast District Health Board 2011

PREPARED BY: WCDHB Infection Control Committee 2009
REVIEWED AND UPDATED BY: WCDHB Infection Control Committee August 2011

Source of Guidelines

These guidelines are based on 2010 West Coast District Health Board antibiotic susceptibility statistics, the Australian 2006 Antibiotic Guideline and local availability. They have been reviewed by WCDHB clinical and pharmacy staff, Dr Anja Werno Medical Microbiologist Canterbury Health Laboratories and Dr Holt Chairman of the Infection Control committee. The guidelines are endorsed by the West Coast Primary Health Organisations and co-ordinate with WCDHB inpatient guidelines

Oral versus parenteral (IV, IM) antibiotics

Oral therapy is generally preferred. Exceptions include:

- The patient cannot take anything orally (e.g., swallowing problems) or is unlikely to absorb the antibiotic (e.g., vomiting, severe diarrhea)
- An oral antibiotic with suitable spectrum is not available
- High doses are required for difficult sites of infection (e.g., endocarditis, meningitis, osteomyelitis, septic arthritis)
- Urgent treatment for severe or rapidly progressive infection
- The patient is unlikely to adhere to oral therapy

Penicillin and cephalosporin cross-reactivity

There is a 3-10% cross-reaction rate between penicillins and cephalosporins.

- If a patient has a mild penicillin allergy or adverse reaction (e.g., mild rash, diarrhea) then you may prescribe a cephalosporin (and vice versa)

- If a patient has a severe penicillin allergy (e.g., severe rash, urticaria, angioedema, anaphylaxis, hypotension or bronchospasm) then do not prescribe a cephalosporin (and vice versa).

Infection control

Cleanse your hands after every patient contact.

Wear examination gloves if touching infected skin or if a multi-drug resistant organism (e.g., MRSA) is suspected or known.

Wear a surgical mask within 1 metre of a patient with droplet-transmitted infection, such as meningococcal, whooping cough or influenza infection.

Antibiotic Guidelines – Empiric Choices

Infection	First choice	Alternatives	Comments
Bites – animal or human	Amox/clavulanate	Metronidazole plus either doxycycline[1] or cotrimoxazole[3]	Prophylaxis for 5 days with same antibiotics if bite ≥ 8 hours ago; wound unable to be debrided adequately; wound on hands, feet or face; involves bone, joint or tendon; or in immunocompromised person. Debride non-viable tissue. Consider tetanus toxoid. Refer if joint involved.
Blastocystis hominis gastroenteritis	As for giardiasis		Usually a non-pathogenic commensal – ignore. If persistent diarrhea, where no other cause found, give trial of therapy
Boils	Flucloxacillin	Erythromycin	Small lesions can be treated with drainage alone. If recurrent (e.g., more than 10 boils over more than 3 months) consider decolonization
Bordetella pertussis			See Whooping cough
Breast – post-partum mastitis or abscess	Flucloxacillin	Erythromycin	Continue breastfeeding throughout infection. If fail, swab for *Candida*
Breast – non-puerperal infection	Amox/clavulanate	Clindamycin[2]	Sub-areolar infections usually involve anaerobes
Bronchiolitis under 1 yr or "wheezy bronchitis" in children	Nil		RSV and other viruses are the cause. Exclude from pre-school/ school until coryzal phase is over
Bronchitis – acute in adults, no underlying lung disease	Nil		Most cases viral. Purulent sputum alone is not an indication for antibiotics. Give antibiotics if bacterial infection diagnosed in laboratory or for patients with severe infection, underlying medical co-morbidity or advanced age

1. Doxycycline: do not use in children under 12 years or in pregnancy after 16 weeks gestation
2. Clindamycin: subsidized only with specialist endorsement; please consult in individual case.
3. Cotrimoxazole: do not use in pregnancy

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Bronchitis – exacerbation in adults with COPD	Amoxycillin 500mg TDS for 5 days	Cefaclor, doxycycline[1]	
Campylobacter gastroenteritis – treat only if severe or prolonged	Erythromycin 500mg (child: 10mg/kg) QID for 5 to 7 days, or EES 800mg (child: 20 mg/kg) QID for 5-7d		Usually self-limited. Treatment may also be justified in late (third trimester) pregnancy or in food handlers and childcare workers. Notifiable
Candida – thrush	Topical azole or Nystatin	Fluconazole[2] 150mg single dose	If recurrent (4 or more symptomatic episodes/yr), induce remission with topical azole or oral Fluconazole 50mg daily (takes 2 wk to 6 mo) then maintain with weekly vaginal cream or oral Fluconazole 150 to 300mg. Treat partner
Cellulitis	Flucloxacillin for 7 to 10 days (child: 100 mg/kg/day)	Erythromycin	Keep affected area elevated. Do not use NSAIDs (increased risk of necrotizing fasciitis)
Cellulitis – periorbital in child	Amox/clavulanate (child:75-100mg/kg/d)	Cefaclor	Refer to Paediatrician in all but very mild cases
Cellulitis – periorbital in adult or in any age if associated with stye, dacryocystitis, impetigo or wound	Flucloxacillin	Cefaclor	Seek specialist advice urgently
Chlamydia and other non-gonococcal urethritis or cervicitis	Azithromycin[3] 1g (10mg/kg for children) single dose	Doxycycline[1] 100mg BD for 7 days	Erythromycin (500mg QID for 7 days then test for cure after 3 weeks) has an "A" safety rating in pregnancy; Azithromycin is "B1"
Clostridium difficile - toxin-positive diarrhea	Metronidazole 400mg (child 10 mg/kg) orally TDS		Treat for 7 to 10 days. If unresponsive, relapsing or severe, consult specialist
Common cold – upper respiratory tract viral infection	Nil		Antibiotics do not prevent bacterial infection. Nasal purulence does not predict response to antibiotics

1. Doxycycline: do not use in children under 12 years or in pregnancy after 16 weeks gestation
2. Fluconazole: do not use in pregnancy. Subsidized only with specialist endorsement
3. Azithromycin: subsidized if prescription endorsed with "certified condition."

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Conjunctivitis			See Topical - conjunctivitis
COPD			See Bronchitis – exacerbation in patients with COPD
Dental infections			See Tooth abscess or Gingivitis
Dermatophytoses – nail, scalp or body	Topical azole, topical terbinafine	Oral terbinafine, oral itraconazole[1]	Oral treatment indicated if culture-proven and has either failed topical treatment, is widespread, involves scalp or nail or is being treated with concomitant topical steroid
Diabetic foot infections	Amox/clavulanate	Clindamycin[2] plus Ciprofloxacin[3]	
Dientamoeba fragilis gastroenteritis	Doxycycline[4] 100mg (child > 12 yrs: 2.5 mg/kg) BD for 3 to 7 d	Metronidazole 400mg (child: 10mg/kg) TDS for 3 to 7 days	Treat only if symptomatic.
Epiglottitis			Refer for hospital assessment
Gastroenteritis – acute, cause unknown	Nil		Fluid replacement is mainstay of treatment. Exclude from pre-school, school or work until symptoms settle. Some causes are notifiable and a few may benefit from antibiotic treatment – see individual organisms
Giardiasis	Metronidazole 2g (child: 30mg/kg) orally daily for 3 days	Ornidazole 1.5g (child: 40mg/kg) in evening for 1-2 days	Treat only if symptomatic. If fails, try Metronidazole 400mg (child: 10mg/kg) TDS for 7 days. Notifiable
Gingivitis acute ulcerative (trench mouth, Vincent's disease)	Metronidazole 400mg (child: 10mg/kg) BD for 5 days		Antibiotics are only an adjunct to debridement, plaque control and chlorhexidine mouthwash (e.g., Rivacol®) BD or TDS. Consider HSV
Gonorrhoea	Ciprofloxacin[3] 500mg orally as single dose	Ceftriaxone[5] 250 mg IM if acquired in Auckland or overseas or if pharyngeal or ano-rectal infection	Treat for Chlamydia as well
Impetigo			See Topical section

1. Itraconazole: use with caution in pregnancy. Subsidized only with specialist endorsement;
2. Clindamycin: subsidized only with specialist endorsement; please consult in individual case
3. Ciprofloxacin: use with caution in children under 14 years and in pregnancy
4. Doxycycline: do not use in children under 12 years or in pregnancy after 16 weeks gestation
5. Ceftriaxone: subsidized on prescription or PSO for "ciprofloxacin-resistant gonorrhoea"

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Influenza	NIL antibiotics, may consider Tamiflu (Oseltamivir)[1] 75mg BD for 5 days		Treat only if onset ≤ 48 hr. Avian or pandemic influenza is notifiable
Laryngitis/Croup	Nil		Almost always viral
Leptospirosis	Penicillin for 5-7 days	Doxycycline[2] 100mg BD for 5-7 d	Start within 1 wk of onset. Notifiable
Mastitis			See Breast
Meningococcal infection, meningitis or severe sepsis – prior to transport to hospital	Ceftriaxone[3] 50 mg/kg up to 2g IV or IM	Adult: penicillin 1.2g IV or IM Child: penicillin 25-50mg/kg IV or IM	Give if haemorrhagic rash in febrile person or in a suspected case in whom the delay to assessment in hospital is likely to be greater than 30 minutes. Notifiable
Otitis media See Comments – Antibiotics NOT usually indicated	Amoxycillin 40-80 mg/ kg/day in 2 to 3 divided doses for 5 days (7-10 days if < 2 yr, underlying medical condition, perforated drum or chronic or recurrent infection)	If fails or persists try Amoxycillin/ clavulanate. If penicillin-allergic use Erythromycin or Cefaclor 10 mg/kg up to 250 mg TDS for 5 days	Spontaneous resolution common. Benefit of antibiotics is small; consider if under 2 yr or with bilateral or severe infection. For others, educate and give paracetamol and antibiotic prescription to redeem if unresolved at 48-72 hrs
Pharyngitis/ tonsillitis – see comments before deciding to treat	Penicillin 500mg (child: 10mg/kg) BD for 10 days	Erythromycin	Usually viral. Give antibiotics only if: • Key features of group A strep. Infection (fever > 38 ^{0}C, tender cervical nodes, tonsillar exudates and no cough), esp. if aged 3 to 14 yrs. If uncertain, swab throat • Patient aged 2 to 25 yrs and high risk group for rheumatic fever (Maori or Pacific Islander from Northland, Counties/Manukau, Gisborne, Bay of Plenty, Waikato or Hawkes Bay) • Existing rheumatic heart disease (treat at any age) • Scarlet fever (Notifiable) • ?peritonsillar abscess (trismus) Exclude from school until 24 h after antibiotics started.

1. Oseltamivir: use with caution in pregnancy; not subsidized
2. Doxycycline: do not use in children under 12 years or in pregnancy after 16 weeks gestation
3. Ceftriaxone: subsidized for prescription or PSO for “suspected meningitis”

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Pneumonia – child (4 mo to 5 yr)	Amoxycillin 25 mg/kg TDS for 7 days	If penicillin allergy or no response in 48 hr review diagnosis and consider Erythromycin	In a young child, suspect pneumonia if tachypnoea, grunting, indrawing and high fever in absence of wheeze (auscultatory findings uncommon)
Pneumonia – adult or child > 5 yr, no co-morbidity or prior antibiotics *(Note: it is not possible to distinguish "typical" from "atypical" pneumonia in individual cases – treat all patients for both sets of causative organisms)*	Amoxycillin 1g (child: 25mg/kg) TDS for 7 days plus either Roxithromycin 300mg daily (child 4mg/kg BD) for 5 days or Doxycycline[1] 200mg STAT then 100mg daily for 5 days (not for child < 12 yrs)	Mild penicillin allergy: replace Amoxycillin with Cefaclor 500mg TDS for 7 days Severe penicillin allergy: Roxithromycin single agent (see dose above)	Patients with co-morbidity (e.g. COPD, diabetes, renal failure, cancer, steroids), recent antibiotics, resident in Rest Home or recently discharged from hospital are more likely to have infections caused by gram-negative bacilli. Substitute Amox/clavulanate for Amoxycillin in these cases
Pneumonia – adult, suspect aspiration	Amox/clavulanate for 7 days	Clindamycin[2]	
Prophylaxis – for endocarditis in patients with heart valve lesions			See www.dml.co.nz/clin_aguide.asp Chapter 13 - Prophylaxis for non-surgical conditions. Bacterial Endocarditis
Prostatitis – acute	As for UTI - cystitis in adult men (treat for 2 wks)		Consider checking for STI pathogens
Prostatitis – chronic	Norfloxacin[3] 400mg BD for 4 weeks, or Ciprofloxacin[4] 500mg orally BD for 4 weeks	Trimethoprim 300mg daily for 4 weeks, or Doxycycline[1] 200mg orally BD for 4 weeks	Only about 1/3 cure rate
Pyelonephritis			See UTI - pyelonephritis
Salivary gland infection – acute bacterial/suppurative	Flucloxacillin	Cefaclor, Clindamycin[2]	Typically in elderly and neonates – usually *Staphylococcus aureus*. May need surgical drainage
School sores			See Topical antibacterial agents
Septicaemia or overwhelming infection			See Meningitis (for empiric antibiotics prior to urgent transfer)

1. Doxycycline: do not use in children under 12 years or in pregnancy after 16 weeks gestation
2. Clindamycin: subsidized only with specialist endorsement; please consult in individual case
3. Norfloxacin: use with caution in children under 14 years and in pregnancy. More than 6 tablets subsidized only with specialist endorsement; please consult in individual case
4. Ciprofloxacin: use with caution in children under 14 years and in pregnancy.

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Shigella gastroenteritis	Cotrimoxazole[1] if susceptible (160 + 800mg (child: 4+20 mg/kg) BD for 5 days)	Norfloxacin[2] 400mg (child: 10 mg/kg) BD for 5 days	Treat all cases. Use Ciprofloxacin if immunocompromised. Notifiable
Sinusitis – acute See Comments – Antibiotics NOT usually indicated	Amoxycillin 500mg (child: 15mg/kg) TDS for 5 to 7 days If fails, try Amox/ clavulanate for 7 to 14 days	Cefaclor 500mg (child: 10mg/kg) TDS for 5 to 7 days Doxycycline[3] 100mg (child > 12yr: 2.5 mg/kg) daily for 5 to 7 days	Consider antibiotics only if ≥ 3 of: • Mucopurulent nasal drip for ≥ 7d • Facial pain • Tenderness over the sinuses, esp. unilateral Maxillary tenderness • Tenderness on percussion of upper teeth (which cannot be attributed to a single tooth)
Salmonella gastroenteritis – only if severely ill (hospitalized) or immunocompromised	Amoxycillin if known to be susceptible	Ciprofloxacin[4]	Antibiotics generally make no difference to outcome and may prolong infectivity. Some treat if < 1 yr, > 50 yr, vascular grafts or prosthetic joint. Notifiable
Tonsillitis			See Pharyngitis
Tooth abscess superficial (involving canine or buccal space)	Penicillin 500mg (child 10mg/kg) QID for 5 days If unresponsive add Metronidazole or use Amox/clavulanate	If penicillin allergic use Clindamycin[5] alone	Antibiotic treatment is only an adjunct to an appropriate dental procedure. Give antibiotics only if face swelling, systemic symptoms or fever. If spread to neck, hospitalize
Traveler's diarrhea	Norfloxacin[2] 800mg (child 20mg/kg) single dose	Norfloxacin[2] 400mg (child 10mg/kg) BD for 2 to 3 days	Many causes, especially enterotoxigenic *E. coli.* Antibiotics only for moderate to severe cases. Antimotility agents indicated in adults without fever or bloody stools
Trichomoniasis	Metronidazole 2g single dose		If relapse, use Metronidazole 400mg BD for 5 days. Treat partners
Thrush			See Candida

1. Cotrimoxazole: do not use in pregnancy
2. Norfloxacin: use with caution in children under 14 years and in pregnancy. More than 6 tablets subsidized only with specialist endorsement; please consult in individual case
3. Doxycycline: do not use in children under 12 years or in pregnancy after 16 weeks gestation
4. Ciprofloxacin: use with caution in children under 14 years and in pregnancy
5. Clindamycin: subsidized only with specialist endorsement; please consult in individual case.

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Ulcers – chronic with excessive purulent discharge, redness and pain	Flucloxacillin	Erythromycin	Increase local cares (lavage, debridement, absorptive dressings); consider cadexomer iodine or silver dressings. Swab if Flucloxacillin fails
Urinary tract infection – cystitis in adult women	Trimethoprim[1] 300 mg/d for 3 days	Nitrofurantoin 50 mg QID for 5 days	Asymptomatic bacteriuria common in elderly women; treat if pregnant, renal transplant or pre- or post-urological procedure. In pregnancy, repeat urine culture to ensure cure
Urinary tract infection – cystitis in adult men	Trimethoprim[1] 300 mg/d for 14 days	Nitrofurantoin 50 mg QID for 14 days	Often underlying urinary tract abnormality or co-existent prostatitis or epididymitis. Investigate all males with UTI for underlying anatomical or functional abnormality
Urinary tract infection – pyelo-nephritis; mild with low fever and no nausea or vomiting	Amox/clavulanate 500+125 mg TDS for 10-14 days	Cotrimoxazole[1] 160+ 800mg BD for 10-14 days, or Cefaclor 500mg TDS for 10-14 days	Identify underlying anatomical or functional abnormalities, especially obstruction. If moderate severity or resistant organisms, use Ciprofloxacin 500mg BD for 10-14 days. If severe or vomiting refer for IV treatment
Urinary tract infection – indwelling catheter	Amox/clavulanate 500+125 mg TDS for 10-14 days if can't wait for results of culture	Norfloxacin[2]	Asymptomatic bacteriuria and pyuria are common and should not be treated. Culture urine and treat only if febrile or rigors, patient has risk factors (e.g., neutropenia, transplantation, pregnancy) or before urological surgery. Treat for 10 to 14 days. Always change catheter

1. Cotrimoxazole (or trimethoprim alone): do not use in pregnancy
2. Norfloxacin: use with caution in children < 14 yr; do not use in pregnancy. More than 6 tablets subsidized only with specialist endorsement; please consult in individual case.

Antibiotic Guidelines – Empiric Choices (continued)

Infection	First choice	Alternatives	Comments
Urinary tract infection - child	Cotrimoxazole 4+20 mg/kg up to 160+800mg BD for 5 days	Amox/clavulanate 12.5+3.1 mg/kg up to 500+125 mg BD for 5 days, or Cefaclor 50mg/kg/day in 3 divided doses for 5 days	Accurate diagnosis very important – make every effort to collect a sample before starting treatment. Re-culture urine 48 hours after treatment to ensure cure. Refer for inpatient treatment if very unwell or < 6 mo old. Discuss with Paediatrician if < 2 yrs. Refer for ultrasound if > 2 yrs
Urinary tract infection – *Candida* sp.	Fluconazole[1] 200mg (child: 5mg/kg) daily for 7 days		Frequently a meaningless colonizer, especially with indwelling catheter. Treat if symptomatic, neutropenic, imminent urological manipulation or infant of low birth weight
Vaginosis - bacterial	Metronidazole 400mg BD for 7 days	Clindamycin[2] 300mg BD for 7 days	If pregnant, use Clindamycin or in first trimester, try 0.5% topical Metronidazole gel[5] BD for 7 days
Whooping cough (*Bordetella pertussis*)	Erythromycin 250mg (child > 1 mo: 10mg/ kg) QID for 7 days, or EES 400mg (child > 1 mo:10 mg/kd) QID for 7 days	Cotrimoxazole[3] 160+ 800mg (child: 4+20 mg/kg) BD for 7 days	Admit if cyanotic spells. Treatment after early paroxysmal cough phase (approx. 21 days) has no effect on illness or infectivity. Exclude from school until 5 days after treatment started. Notifiable
Wound infection – deep penetrating or post-operative	Amox/clavulanate **NB:** for post-operative infections consult the operating surgeon urgently	Cefaclor, Clindamycin[2] (add Ciprofloxacin[4] to Clindamycin if abdominal wound)	Drainage and irrigation are often all that is needed. Give tetanus toxoid if indicated.

1. Fluconazole: do not use in pregnancy. Subsidized only with specialist endorsement;
2. Clindamycin: subsidized only with specialist endorsement; please consult in individual case
3. Cotrimoxazole: do not use in pregnancy
4. Ciprofloxacin: use with caution in children under 14 years and in pregnancy.
5. Metronidazole Gel is not subsidised

Topical Antibacterial Agents

Resistance rates for *Staphylococcus aureus* to Mupirocin and Fusidic acid have increased dramatically in New Zealand over the last decade as a result of overuse of these agents. Please use them only when indicated – see below.

Infection	First choice	Alternatives	Comments
Burns – prevention of infection	Silver sulphadiazine cream 1% (Flamazine®)		Very broad spectrum, painless, soothing and well studied. Infected burns need systemic antibiotic treatment. If ?deep, don't use until fully assessed as disguises depth
Conjunctivitis – bacterial	Mild: cleansing and lubricants +/- Propamidine drops or ointment (OTC)	Moderate or severe: Chloramphenicol eye drops during day +/- ointment at night	If steroid needed, consult Eye specialist. Consult specialist if meningococcal conjunctivitis. Treat chlamydia conjunctivitis orally
Decolonisation of MRSA in health-care workers or *S. aureus* in patients with recurrent boils	Mupirocin ointment[1] 2% Triclosan 1% Body wash[2]	Fusidic acid cream or ointment 2% Chlorhexidine body wash	Best used as part of comprehensive decolonization protocol including oral antibiotics, antiseptic body wash and environmental cleaning. Contact Infection Control ext 2651 to discuss protocol
Impetigo/school sores – localized; treatment of other minor skin infection	Topical hydrogen peroxide 1% (e.g., Crystacide®)	If Impetigo generalized or severe – use oral Penicillin (Povidone iodine probably not effective)	For impetigo, wash crusts off. Exclude from pre-school or school until treatment started and ensure sores completely covered with water-tight dressing
Eczema - infected	A steroid/antibiotic combination e.g. Pimafucort®		Severely infected eczema needs targeted systemic antibiotic treatment as per cellulitis
Otitis externa – acute diffuse	Sofradex® drops[3] 4 to 6 drops 2 to 3 times a day		Keep dry, consider suction. Swab if no response in 5 days. Note: v. low risk of ototoxicity if myrinx intact
Prevention of infection in superficial wounds - traumatic or post-operative	Povidone iodine 10% ointment, hydrogen peroxide 1% cream (Crystacide®)	Almost any topical antiseptic or antibacterial agent probably works, even honey or manuka oil.	Topical antibiotics reduce risk of infection. Consider especially in patients with face wounds, heavily contaminated wounds, immuno-compromised or previous cellulitis in that region. **Please avoid agents that have key roles in other conditions (e.g., mupirocin, fusidic acid, silver sulphadiazine)**
Ulcers - chronic	Nil		Not effective. May delay healing

1. Mupirocin Ointment 2% (Bactroban): only partially subsidized; extra cost approximately $8.80.
2. Triclosan 1% Solution 500mL: only subsidised by endorsement
3. Sofradex Drops: only partially subsidized; extra cost approximately $9.10

Contacts

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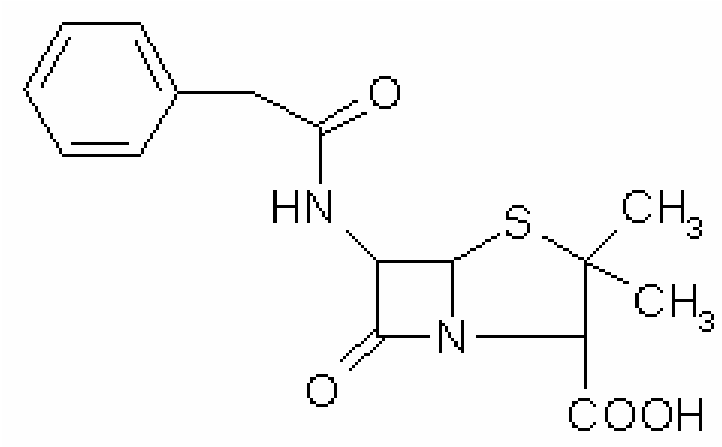

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Nelson Marlborough District Health Board